



Amoco Exploration & Production

U.S. A. Operations Group
501 WestLake Park Boulevard
Houston, Texas 77079
713/366-2225
Fax: 713/366-7676

Jerry M. Brown
Group Vice President

March 20, 1996

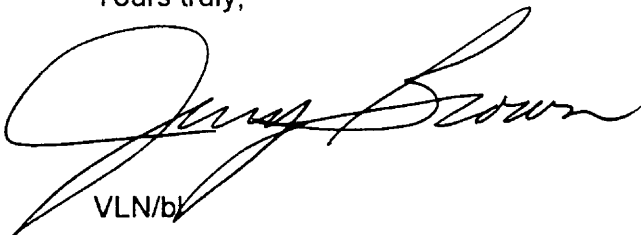
Mr. Rhone Resch
USEPA/OAR (62021)
Global Change Division
401 M Street, SW
Washington, DC 20460

Dear Mr. Resch:

Natural Gas STAR Implementation Form

Please find enclosed Amoco's Program Implementation Form for the Natural Gas STAR Program. In addition, I have included a brief narrative on Amoco's accomplishments to date on this issue. Amoco is pleased to join with the EPA in this effort to determine cost-effective ways to reduce emissions to the atmosphere. If you have any questions, please contact Vick L. Newsom at 713/366-7655.

Yours truly,



VLN/bl

Enclosures

Natural Gas STAR Producers Program Implementation Form

COMPANY NAME Amoco Exploration and Production
Southeast Business Unit

1. COMPANY SUMMARY

Implementation Manager: Bernard Herbert Telephone: 713/366-7655

Title: Southeast Business Unit EH&S Manager

Address: P.O. Box 3092, Houston TX 77253

Implementation Report Summary

- | 1. | Will your company implement BMP 1? | <u>Yes</u> | | | | | | | | | | | | | |
|--|---|------------|---|--|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|
| 2. | Total number of high-bleed pneumatics: | <u>199</u> | | | | | | | | | | | | | |
| 3. | Estimated number of high-bleed pneumatic devices to be replaced in each of the next five years: | | <table border="0"><tbody><tr><td>1995</td><td><u>10</u></td></tr><tr><td>1996</td><td><u>25</u></td></tr><tr><td>1997</td><td><u>25</u></td></tr><tr><td>1998</td><td><u>25</u></td></tr><tr><td>1999</td><td><u>30</u></td></tr><tr><td>2000</td><td><u>40</u></td></tr></tbody></table> | 1995 | <u>10</u> | 1996 | <u>25</u> | 1997 | <u>25</u> | 1998 | <u>25</u> | 1999 | <u>30</u> | 2000 | <u>40</u> |
| 1995 | <u>10</u> | | | | | | | | | | | | | | |
| 1996 | <u>25</u> | | | | | | | | | | | | | | |
| 1997 | <u>25</u> | | | | | | | | | | | | | | |
| 1998 | <u>25</u> | | | | | | | | | | | | | | |
| 1999 | <u>30</u> | | | | | | | | | | | | | | |
| 2000 | <u>40</u> | | | | | | | | | | | | | | |
| 4. | Will your company implement BMP 2? | <u>Yes</u> | | | | | | | | | | | | | |
| 5. | Total number of dehydrators: | <u>90</u> | | | | | | | | | | | | | |
| 6. | Estimated number of flash-tank separators to be installed in each of the next five years: | | <table border="0"><tbody><tr><td>1995</td><td><u>1</u></td></tr><tr><td>1996</td><td><u>3</u></td></tr><tr><td>1997</td><td><u>3</u></td></tr><tr><td>1998</td><td><u>3</u></td></tr><tr><td>1999</td><td><u>10</u></td></tr><tr><td>2000</td><td><u>5</u></td></tr></tbody></table> | 1995 | <u>1</u> | 1996 | <u>3</u> | 1997 | <u>3</u> | 1998 | <u>3</u> | 1999 | <u>10</u> | 2000 | <u>5</u> |
| 1995 | <u>1</u> | | | | | | | | | | | | | | |
| 1996 | <u>3</u> | | | | | | | | | | | | | | |
| 1997 | <u>3</u> | | | | | | | | | | | | | | |
| 1998 | <u>3</u> | | | | | | | | | | | | | | |
| 1999 | <u>10</u> | | | | | | | | | | | | | | |
| 2000 | <u>5</u> | | | | | | | | | | | | | | |
| 7. | Other BMPs (Describe)
<u>Installed BMP 2 controls (1990 - 1994)</u> | <u>27</u> | <table border="0"><thead><tr><th colspan="2">Number of Devices or
Emission Reduction</th></tr></thead><tbody><tr><td></td><td><u>27</u></td></tr><tr><td></td><td><u></u></td></tr><tr><td></td><td><u></u></td></tr></tbody></table> | Number of Devices or
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Amoco's Commitment to the Environment

Amoco Corporation, the largest natural gas producer in the U.S., has always maintained a strong commitment to efficiency and environmental protection. Following are highlights from some of the activities implemented by Amoco that reduce emissions of methane to the atmosphere.

In developing the Natural Gas STAR strategy, Amoco used our Southeast Business Unit as our test case and looked for new opportunities to reduce methane emissions from field components. Modifications to glycol reboilers and high-bleed gas-actuated pumps were two activities that show promise for reducing methane emissions.

Glycol dehydration units traditionally use triethylene glycol (TEG) to remove water from field gas before the natural gas is sold. By bringing the natural gas into contact with the glycol, water and other impurities are removed from the gas. In addition, methane and other hydrocarbons are absorbed in the glycol during this process. When the glycol is regenerated, usually through heating in reboilers, water, methane and other hydrocarbons are released from the glycol. To solve the problem of the hydrocarbon emissions, Amoco installed an atmospheric condenser on dehydration units followed by incineration. This simple and effective method successfully reduced emissions from reboilers by 99%. Since the TEG has a high affinity for hydrocarbons other than methane, Amoco has also been able to capture significant amounts of condensate in larger operations.

In Louisiana one facility removes over 7 million pounds of hydrocarbon emissions each year. This includes methane, ethane and other hydrocarbons that would otherwise be released into the atmosphere. At this facility, which handles 100 million cubic feet of natural gas and 8,000 barrels of condensate per day, Amoco recovered the cost of the condensate and incineration controls in just four months.

Amoco has also addressed emissions from high-bleed natural gas operated pumps -- overall, the largest source of methane emissions in the production sector. In studying the opportunities for reducing methane emissions from this source, Amoco found that the high-bleed pumps studied vent about 80,000 standard cubic feet (scf) of methane per year, with an operation cost of about \$160 per year. By comparison, Amoco discovered that the low-bleed gas actuated pumps vent just 10,000 scf/year of methane and cost only \$20 per year to operate. Although the low-bleed pump initially costs about \$300 more than the high-bleed model, Amoco recovered the costs of the investment in the low-bleed device in about two years.

Finally, Amoco routinely incorporates design and maintenance practices that reduce emissions of methane. Examples include close spacing of mainline block valves to reduce blowdown venting, installation of over-pressurization protection systems on relief valves and increased use of stops and by-pass lines. Through participation in EPA's Natural Gas STAR Program, Amoco will continue to identify and implement technologies and practices that eliminate methane emissions and lead to even greater efficiencies.